1774

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Sigel	)	
Serial No:	09/777,040	)	Art Unit: 1774
Filed:	February 5, 2001	)	Examiner: Nguyen, Kimberly
For:	Surface Covering Having Gloss In-Register and Method Of Making	)))	Docket No. A148 1330

#10/A
KN
10-8-02

AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the Office Action mailed in connection with the above-identified application on June 5, 2002, please amend the application as follows. A Petition for a One Month Extension of Time, to and including October 5, 2002, is attached.

In the Claims

Please cancel claims 23-37 and 46-54, and substitute the following claims for those corresponding claims as originally filed. A marked-up version of the claims as amended herein is attached in an Appendix.

1. (Amended) A surface covering or surface covering component comprising:

a) a substrate and,

b) a top coat overlying the substrate, the top coat being formed from a radiation curable composition, the top coat comprising an exposed surface that includes a first region with a first concentration of a gloss controlling agent and a second region with a second different concentration of the gloss controlling agent,

whereby the exposed surface of the top coat adjacent the first region has a first gloss level and the exposed surface of the top coat adjacent the second region has a second different gloss level,

CERTIFICATE OF MAILING

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Assistant Commissioner for Patents
Washington, D.C. 20231

Response to Office Action
Amendment
Claims after Amendment
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on 9/27/02.

Debra Quadrino
(Typed or printed name of person mailing correspondence)

Debra Quadrino
(Signature of person mailing correspondence)

Serial Number: 09/777,040 Filing Date: February 5, 2001
Title: **SURFACE COVERING HAVING GLOSS IN-REGISTER AND METHOD OF MAKING**
Our Reference Number: A148 1330

wherein the first and second regions have been cured to approximately the same extent.

9. (Amended) A surface covering or surface covering component comprising:

a) a substrate and

b) a top coat comprising a first region having a first gloss level and a second region having a second gloss level different from the first region, the top coat overlying the substrate,

wherein the top coat is formed from a UV-curable composition comprising a UV curable component and a flatting agent and,

wherein the different gloss levels are achieved by curing the UV-curable composition using a first polymerization condition in the first region and a second different polymerization condition in the second region, and wherein the UV-curable component in the first and second regions is cured to approximately the same extent.

12. (Amended) The surface covering or surface covering component of claim 9, further comprising a patterned layer between the substrate and the top coat, wherein the patterned layer includes a pattern of a gloss controlling agent selected from the group consisting of a thermal initiator, cure altering agents, and mixtures thereof,

the patterned layer is in contact with the UV-curable composition, and the UV-curable composition comprises a thermal curing agent.

43. (Amended) The surface covering component of claim 38, wherein the film comprises a second patterned design applied to either the top or bottom surface.

Restriction Requirement

The claims were restricted to two groups, Group I, claims 1-22 and 38-45, drawn to surface coverings and surface covering components, and Group II, claims 23-37 and 46-54, drawn to methods of making a surface covering or surface covering component. Applicants confirm the election of Group I, and have cancelled the claims of Group II.

Objections to the Claims

Claim 43 was objected to as including the phrase "top of bottom surface " rather than "top or bottom surface." The claim has been amended as suggested by the Examiner.

Rejections under 35 U.S.C. § 112, Second Paragraph

Claims 1-22 and 38-45 have been rejected under 35 U.S.C. § 112, second paragraph as indefinite. The rejections are traversed if applied to the amended claims.

The Office Action states that the term "substantially homogeneous" in claims 1 and 38 renders the claims indefinite. Applicants have removed the term from claim 1, thus mooting the rejection of that claim. The top coat layer is substantially homogeneous because a single coating composition is applied. The differential gloss layer is formed as a result of differential polymerization conditions in various regions in the top coat layer rather than by applying different top coat compositions. That said, removing the language "substantially homogeneous" does not add new matter to the claims.

With respect to claim 38, the differential gloss arises from the fact that the portion of the top coat layer overlying a curing altering agent is cured differently than the portion of the top coat layer not overlying the curing altering agent. Those of skill in the art understand that there may be some degree of diffusion of the curing altering agents, and accordingly, some degree of curing nearby the design layer, so that the overlap between the agent and the differential cure may not be exact, but the differential cure would occur "substantially" over the curing altering agent. This degree of inexactness would be expected and understood by those of skill in the art, and does not render the claims indefinite.

The Office Action further states that the phrase "localized adjacent one surface of a topcoat" in claim 6 is unclear. The specification clearly states that the first and second regions can be formed by printing a curing altering agent above or below the top coat layer. Claim 6 refers to the embodiments where the first region and second region are on the same side (or surface) of the top coat. Accordingly, the claim is not indefinite.

Claim 12 was said to lack antecedent basis for the term "second thermal curing agent." The claim has been amended to take out the word "second," thus mooting the rejection.

Claims 15, 19, 20 and 43 were rejected on the basis that the term "are in/not in register with" was unclear. The terms "in register" and "not in register" are well known in the art. For example, in those regions of the print layer where a photoinitiator is printed, the overlying UV-curable composition (in register with the printed photoinitiator) can be cured by exposure to UV

irradiation. In those regions of the print layer where a photoinitiator is not printed, the overlying UV-curable composition (not in register with the printed photoinitiator) are **not** cured by exposure to the same UV irradiation. Hence, the curing occurs in register with the printed photoinitiator.

Claim 38 was rejected on the basis that the term "is substantially in register with at least a portion of the design" is unclear. The composition of claim 38 includes a film layer with a gloss controlling agent applied to portions of the film layer in a pattern. As discussed above, the differential gloss is in register with the pattern in which the gloss controlling agent is applied. It is believed that this explanation is satisfactory to obviate the rejections.

Rejections under 35 U.S.C. § 102 (b)

Claims 1-22, 38-39 and 43-44 have been rejected under 35 U.S.C. § 102 (b) as anticipated by U.S. Patent No. 4,491,616 to Schmidle et al. ("Schmidle"). These rejections are respectfully traversed if applied to the amended claims.

The Claimed Subject Matter

The claims as amended are directed to surface coverings or surface covering components that include a substrate and a top coat overlying the substrate, where the top coat is formed from a composition that includes UV-curable components. The same UV-curable components are present in a first and a second region in the top coat, and cured in the first and second regions by different free radical mechanisms, such as thermal initiation, photoinitiation or electron beam curing. Differential gloss is achieved by subjecting the curable components in the first and second regions to different polymerization (crosslinking) mechanisms. However, the final degree of crosslinking of the UV-curable components in the first and second regions is approximately the same, even though the cure has been effected by a different mechanism (thermal initiation, photoinitiation or electron beam curing) in each region. The presence or absence of a curing altering agent (or varying concentrations thereof, or varying types thereof) in various regions of the top coat provides for differential gloss levels in the various regions. This is a totally different curing mechanism than the fusing of a plastisol.

Schmidle

Schmidle teaches forming a product with dull and glossy areas by incorporating a photoinitiator into a design layer that is applied to the surface of a substrate. A resinous wear layer composition that includes both a plastisol and a UV curable monomer is applied over the design layer. The UV curable monomer overlying those portions of the design layer that include the photoinitiator is cured, and then the plastisol is fused by heating. Those areas where the monomer is crosslinked have a dull or mat surface, in contrast to areas where the monomer is not crosslinked (col. 2, lines 11-29).

Analysis

Schmidle achieves differential gloss by curing two completely different materials by two completely different curing mechanisms (that is, UV-curable components cured by photoinitiation and plastisols cured by heating). The UV-curable material is not cured in the some regions, and is cured in others. This provides the differential gloss.

In contrast, the claimed surface coverings or surface covering components of claims 1-8 compositions include a curable component that is crosslinked to approximately the same extent, but by a different free radical polymerizable mechanism or polymerization rate, in different regions on the top coat layer. The differential cure is achieved using two different free radical mechanisms (thermal initiation and photoinitiation, photoinitiation and electron beam curing or thermal initiation and electron beam curing), or is achieved at two different rates producing regions of different gloss.

Another way to distinguish the claimed compositions from Schmidle's compositions is that the claimed compositions include a thermoset top coat layer, whereas Schmidle's top coat layer is largely thermoplastic (i.e., a plastisol).

The product-by-process claims (claims 9-22) are also novel in view of Schmidle's compositions. Schmidle's compositions include a UV-curable component, but this component is only cured by one mechanism. The regions where the UV-curable component is cured by photoinitiation have relatively low gloss. In contrast, in the claimed compositions, the free-

radical polymerizable components are cured by two different mechanisms, and include regions where the free-radical polymerizable materials provide relatively low and relatively high gloss, even though the degree of crosslinking is approximately the same in both regions.

The presence of two regions with different gloss levels but approximately the same degree of crosslinking represents a structural difference that is neither disclosed nor suggested by Schmidle. In fact, Schmidle teaches away from the claimed product, because Schmidle teaches that the addition of a second type of curable material, which is not curable by free radical polymerization (i.e., the thermoplastic PVC plastisol) is required to achieve differential gloss.

Claims 38-45 are directed to surface covering components. Schmidle does not teach or suggest surface covering components, only completed surface coverings. Accordingly, Schmidle does not teach each element of these claims.

The rejections should be withdrawn if applied to the amended claims.

Rejections under 35 U.S.C. § 103 (a)

Claims 21 and 41-42 have been rejected under 35 U.S.C. § 103 (a) as obvious over Schmidle in view of U.S. Patent No. 6,333,076 to Sigel et al. ("Sigel"). These rejections are respectfully traversed.

As discussed above, Schmidle does not teach each element of the amended claims. Accordingly, the combination of Schmidle and Sigel does not suggest each element of claims 21 and 41-42. Should this rejection be maintained, Applicants reserve the right to file a Declaration under 37 C.F.R. 1.131 swearing behind the Sigel patent.

Conclusion

The Examiner is respectfully requested to withdraw all outstanding rejections in light of the amendments to the claims and the comments presented above. The Examiner is encouraged to contact the undersigned to facilitate prosecution if any outstanding issues remain.

Respectfully submitted,

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